

AMENDMENTS TO CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) An acoustic testing apparatus for testing a laminate material comprising at least one first layer of a first material having a first velocity for a first vibration mode and at least one second layer, adjacent to said first layer, of a second material having a second velocity for a second vibration mode, approximately equal to said first velocity, said acoustic testing apparatus comprising:

a first transducer for projecting an acoustic test signal onto a first layer of said at least one first layer of a first material disposed in a testing zone; ~~and, characterised by:~~

a second transducer for receiving said test signal from said testing zone, and in that said first transducer is adapted to project said test signal at an angle so as to generate vibrations of at least said first vibration mode in said first layer ~~vibrations of at least said first vibration mode~~, wherein said vibrations of said first vibration mode are incident on an interface with said second layer of said second material under an incidence angle so as to produce ~~in said second layer~~ vibrations of at least said second vibration mode in said second layer, so that refraction of said test signal at said interface is suppressed.

2. (Original) An acoustic testing apparatus according to claim 1, wherein said first transducer is adapted to project said test signal at an angle so that said vibrations of said first vibration mode predominate in said first layer.

3. (Previously Presented) An acoustic testing apparatus according to claim 1, wherein said first transducer is adapted to project said test signal at an angle so as to suppress in said first layer the generation of vibrations of at least said second vibration mode.

4. (Previously Presented) An acoustic testing apparatus according to claim 1 wherein said second transducer is arranged to receiving said test signal reflected from said testing zone.

5. (Currently Amended) An acoustic testing apparatus according to claim 1, wherein said second transducer is adapted to receive said reflected test signal at one or more locationsat least ~~one location~~.

6. (Previously Presented) An acoustic testing apparatus according to claim 1, wherein data associated with said laminate material is directly derivable as a function of time and position from said reflected test signal received by said second transducer.

7. (Previously Presented) An acoustic testing apparatus according to claim 1, wherein at said interface said vibrations of said first vibration mode are converted to vibrations of said second vibration mode.

8. (Previously Presented) An acoustic testing apparatus according to claim 1, said vibrations of said first vibration mode are a shear wave and said vibrations of said second vibration mode are a compression wave, or vice versa.

9. (Original) An acoustic testing apparatus according to claim 6, wherein said angle corresponds to the angle of incidence of said test signal on said first layer measured with respect to the normal, and is between approximately 14 and 30 degrees.

10. (Previously Presented) An acoustic testing apparatus according to claim 1, wherein the frequency of said test signal is in excess of the order of 20 MHz.

11. (Previously Presented) An acoustic testing apparatus according to claim 1, further comprising a plurality of second transducers arranged in an array.

12. (Currently Amended) An acoustic testing apparatus according to claim 1, wherein said second transducer is ~~transducer/s is/are~~ arranged to be moveable to a plurality of locations for receiving said reflected test signal.

13. (Previously Presented) An acoustic testing apparatus according to claim 1, wherein said second transducer is rotatably mounted on a support.

14. (Previously Presented) An acoustic testing apparatus according to claim 1, wherein said first transducer is disposed on a surface of a solid element, wherein said surface is arranged so as to cause said first transducer to project said vibrations at said incidence angle.

15. (Currently Amended) An acoustic testing method for testing a laminate material comprising at least one first layer of a first material having a first velocity for a first vibration

mode and at least one second layer, adjacent to said first layer, of a second material having a second velocity for a second vibration mode, approximately equal to said first velocity, said acoustic testing method including the steps of:

using a first transducer to project an acoustic test signal onto a first layer of said at least one first layer of a first material disposed in a testing zone; ~~and, characterised by:~~

using a second transducer to receive said test signal reflected from said testing zone, and by adapting said first transducer to project said test signal at an angle so as to generate ~~in said first layer~~ vibrations of at least said first vibration mode in said first layer, wherein said vibrations of said first vibration mode are incident on an interface with said second layer of said second material under an incidence angle so as to produce ~~in said second layer~~ vibrations of at least said second vibration mode in said second layer, so that refraction of said test signal at said interface is suppressed.